

ABSTRACT OF THE DISCLOSURE

6 α -fluorpregnanes (I), where the dotted line between positions 1 and 2 represents a single or double bond; R₁ is OH, OCOR₂, X, SO₃R₃, or an (R₇)(R₈)(R₉)SiO- group, where X is halogen, R₂ and R₃ are C₁₋₆ alkyl or phenyl optionally substituted by C₁₋₄ alkyl, and R₇, R₈ and R₉, 5 equal or different, are C₁₋₆ alkyl or phenyl optionally substituted by C₁₋₄ alkyl, can be obtained by means of a high stereoselectivity process comprising reacting a 3-(trisubstituted)silyloxy-pregna-3,5-diene (IV) with a fluorinating agent selected among N-fluorosulfonimides and N-fluorosulfonamides. The 6 α -fluorpregnanes (I) are intermediates for the synthesis of steroids useful as anti-inflammatory and anti-asthmatic agents.